

Dimensions about as in *carruthersi*. Hind foot (dry) 48 mm.

Hab. Wabembe region, west of the north end of Lake Tanganyika.

Type. Adult male. B.M. no. 22. 3. 3. 3. Original number 23. Collected by R. Grauer. One specimen.

This beautiful squirrel is readily distinguishable from true *carruthersi* by its yellow-washed under surface.

It would seem to be the representative of that animal on the Belgian Congo side of Lake Tanganyika.

LIV.—*The West African Forms of Heliosciurus rufobrachium.*
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IN connection with the determination of Mr. Willoughby Lowe's Ivory Coast squirrels, I have found occasion to lay out the whole of our West African specimens of the *rufobrachium* group. These are sufficient to give a fair idea of the forms found in West Africa west of the Cameroons, and appear to show that the recognizable forms are eight in number.

It is curious that on the Gold Coast, and north of it, two brightly coloured forms occur which shut off the dull-coloured Sierra Leone and Portuguese Guinea animals from the similarly dull-coloured forms found in Nigeria and eastwards.

Commencing in the furthest north-west, we have :—

1. *Heliosciurus rufobrachium caurinus*, subsp. n.

General colour of average intensity, near "raw umber," chest and belly washed with whitish; forearms and inner sides of thighs little reddened; hands and feet grizzled buffy and white, tail washed with whitish.

Length of type-skull 52 mm.

Hab. Portuguese Guinea; type from Gunned; alt. 50 m.

Type. Adult female. B.M. no. 10. 4. 9. 6. Original number 13. Collected 2nd June, 1909, by Dr. W. J. Ausorge. Four specimens.

2. *Heliosciurus rufobrachium leonensis*, subsp. n.

Like *caurinus*, but more strongly coloured throughout. Back darker, under surface more less or washed with

buffy; forearms and inner sides of thighs ochraceous; feet grizzled ochraceous and black; tail less conspicuously whitish. Skull averaging a little larger.

Length of type-skull 55 mm.

Hab. Sierra Leone and north-westwards. Type from Mano; other specimens from Mozamba and from Berria, extreme Upper Niger.

Type. Adult female. B.M. no. 4. 11. 1. 3. Collected 14th February, 1904, by Robin Kemp. Five specimens.

3. *Heliosciurus rufobrachium maculatus*, Temm.

Sciurus maculatus, Temm. Esq. Zool. Guin. p. 130 (1853) (Gold Coast; type in Leyden Mus.).

*Macroxus rufobrachiatu*s, var. *waterhousii*, Gray, Ann. & Mag. N. H. (3) xx. p. 328 (1867) (type B.M. no. 57. 12. 10. 6, from Ashanti).

*Sciurus (Heliosciurus) rufobrachiatu*s *libericus*, Miller, P. Ac. Sci. Wash. ii. p. 633 (1900) (Mount Coffee, Liberia; type U.S. Nat. Mus. no. 83834).

Sciurus aschantiensis, Neum. SB. Ges. Nat. Fr. 1902, p. 175 (Ashanti; type B.M. no. 84. 1. 7. 1).

General colour dark; under surface more or less brown-mixed. Forearms and inner sides of thighs deep rich ochraceous rufous, contrasting with the rest of the body.

Hab. Eastern Sierra Leone, through Liberia and the Gold Coast to Ashanti. Specimens examined from Daru, Sierra Leone; Bassa, Liberia; Axim, Gold Coast; and Ashanti.

4. *Heliosciurus rufobrachium hardyi*, Thos.

Supra, p. 519 (type B.M. 23. 2. 3. 13).

Allied to *maculatus* by the marked contrast of the reddish forearms and thighs with the rest of the body, but conspicuously paler throughout; the back pale grizzled grey, the belly whitish.

Hab. Ivory Coast Protectorate, type-series from Béoumi.

Passing to the forms occurring to the east of the brightly-marked *maculatus* and *hardyi*, it might be convenient to commence with the squirrels of Fernando Po, that being the place where the first members of the group were obtained. In that island a considerable number of specimens were obtained by Mr. Seimund on the Fernando Po Expedition of 1903-4, and a study of these shows that the island contains two forms, a highland and a lowland subspecies.

5. *Heliosciurus rufobrachium rufobrachium*, Waterh.

Sciurus rufobrachium, Waterh. Ann. & Mag. N. H. (1) x. p. 202, Nov. 1842 (Fernando Po).

Sciurus rufobrachiatus, id. P. Z. S. 1842, p. 128 (pub. Jan. 1843) (type of both names, B.M. no. 47. 1. 18. 68).

Colour grizzled brownish grey, of medium intensity. Under surface pale brownish, slightly washed with dull buffy whitish. Fringes of forearms and inner sides of thighs distinctly red, but not brilliantly contrasted as in the two last subspecies. Hands and feet grizzled ochraceous. Tail with the lighter rings on the hairs—at least for the basal half—more or less strongly ochraceous.

Hab. Uplands of Fernando Po, 500 to 1800 m.

Of the two forms that occur in the island, both the type, and the specimens obtained for the British Museum by Mr. T. Thomson, and mentioned in Gray's List of 1843, most nearly match the darker form, that found high up on the Clarence Mountains.

6. *Heliosciurus rufobrachium atticola*, subsp. n.

Like true *rufobrachium*, but paler throughout.

General colour above grizzled grey, with much less of the brownish tone found in *rufobrachium*. Under surface pale brownish, the chest and inguinal regions whitish. Fringes of forearms strong buffy. Hands grizzled buffy. Tail without buffy suffusion on its basal half.

Dimensions of type, measured in flesh :—

Head and body 206 mm.; tail 186; hind foot 46; ear 17; greatest length of shell 50.

Hab. Fernando Po, down near sea-level. Type from Santa Isabel, 10 m.; other specimens from Fish Town, 10 m.

Type. Adult female. B.M. no. 4. 7. 1. 75. Original number 7.

Collected 23rd December, 1903, by Mr. E. Seimund during the Fernando Po Expedition. Twelve specimens.

This comparatively pale form was found by Mr. Seimund close down to the beach. It has the appearance of being an inhabitant of an area less saturated than the high ground where true *rufobrachium* occurs.

7. *Heliosciurus rufobrachium isabellinus*, Gray.

Macroscus isabellinus, Gray, Ann. & Mag. N. H. (3) xx. p. 329 (1867).

Very like the low country Fernando Po form, but the

reddish of the forearms is almost imperceptible, that of the thighs is as a rule much reduced, the light chest and inguinal hairs have more prominently dark bases, and the tail is more heavily black-ringed.

Hab. Lower Niger. Specimens seen from Lagos (*Lowe*), Forçados, Degama and Oçuta (*Ansorge*), and "Bird Rock," 200 miles up the Niger (*Lort Phillips*).

Type. Adult female. B.M. no. 44. 3. 30. 3. Purchased of the dealer Warwick.

This race is very like *H. r. acticola*, no doubt on account of living under similar climatic conditions; but differs enough to have the island form subspecifically separated from it. The type was erroneously identified by me in 1909 with an Angolan member of the group, but there can be no question that the present is its proper allocation.

8. *Heliosciurus rufobrachium obfuscatus*, subsp. n.

General colour very dark, conspicuously darker than the Nigerian *isabellinus*; approximating to "mummy-brown" above; under surface muddy-brown, the chest and inguinal region little lightened. Fringes of forearms and inner sides of legs deep rich rufous. Hands and feet dark mixed brown and dull ochraceous. Tail mixed black and ochraceous, the former more dominant than usual.

Length of type-skull 53 mm.

Hab. Oban district of South-eastern Nigeria; type from Ekkonnanakku. Alt. 200'. One specimen from Rio del Rey (*Sir H. H. Johnston*).

Type. Adult female. B.M. no. 9. 5. 8. 2. Original number 4. Collected 21st March, 1909, and presented by P. A. Talbot, Esq. Thirteen specimens, all obtained by Mr. Talbot, except that from the Rio del Rey.

A very distinct saturated form, markedly different from the comparatively pale Nigerian *isabellinus*, and much larger than the small *emissus* to the east of it.

Of the subspecies of this group found further eastwards and southwards, I am not yet in a position to work out the detailed ranges of *emissus*, *Thos.*, *benga*, *Cabr.*, and *aubryi*, M.-Edw., which occur in that order from north to south through the Cameroons to the Gaboon.